510(K) Summary of Safety and Effectiveness SEP 2 1 2011

IMMULITE® Unconjugated Estriol (uE3) Calibration Verification Material

This summary of 510(K) safety and effectiveness information is being submitted in accordance with the requirements of SMDA 1990, and 21 CFR 807.92.

A. 510(K) Number: K110061

B. Date of Preparation: September 14, 2011 (Revised)

C. Proprietary and Established Names:

IMMULITE® Unconjugated Estriol (uE3) Calibration Verification Material

Applicant:

Siemens Healthcare Diagnostics Inc., 511 Benedict Ave, Tarrytown, NY 10591

Ernest Joseph, Regulatory Affairs Manager

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E. Regulatory Information:

IMMULITE® Calibration Verification Material, uE3

1. **Regulation section:** 21 CFR § 862.1660
2. **Classification: Class I**
3. **Product Code: JJX**
4. **Panel: Clinical Chemistry**

F. Predicate Device:

The ADVIA Centaur® Enhanced Estradiol Master Curve Material is for *in vitro* diagnostic use in the verification of calibration and reportable Range in the ADVIA Centaur® Enhanced Estradiol (eE2) assay cleared under 510k number K102904.

G. Device Description:

IMMULITE unconjugated Estriol assays are traceable to an internal standard and manufactured using qualified materials and measurement procedures. Calibration

Verification Material (CVM) is traceable to this standard. For additional information, consult the assay instruction for use.

One set of four vials, 2 mL each, containing low, intermediate and high levels of unconjugated estriol in processed horse serum, with preservative, and an unconjugated estriol free sample. The calibration verification material (CVM) is supplied in liquid form, ready to use. Store unopened materials refrigerated at 2–8°C until expiration date. CVM's are for single use only, immediately after opening, and discard after use.

Statement of Intended Use:

For *in vitro* diagnostic use as a control for calibration verification of the IMMULITE® Unconjugated Estriol (uE3) assays on the IMMULITE/IMMULITE® 1000, and IMMULITE® 2000 systems.

Comparison to the Predicate Device: Similarities and Differences between the devices and the predicate are shown below:

Similarities:

	IMMULITE® Device	**Predicate**
Item	IMMULITE® Calibration Verification Material (K110061)	ADVIA Centaur® Master Calibration Material (K102904)
Intended use	For *in vitro* diagnostic use as a control for calibration verification of the IMMULITE Unconjugated Estriol (UE3) assays on the IMMULITE/IMMULITE 1000, IMMULITE 2000 systems.	The ADVIA ® Centaur Enhanced Estradiol Master Curve Material is for *in vitro* diagnostic use in the verification of calibration and reportable range in the ADVIA Centaur® Enhanced Estradiol (eE2) assay.
Assay	Estriol	Estradiol

Differences:

	Device	Device
Item	IMMULITE ® Calibration Verification Material (K110061)	ADVIA Centaur® Master Calibration Material (K102904)
Form	Liquid	Lyophilized
Matrix	Estriol in processed horse serum	Estradiol in processed human serum
Number of Levels	4	6
Stability	**Unopened** –until expiration date on the label at 2-8 °C	**Unopened** – until expiration date on the label at 2-8°C **reconstituted** - 14 days **on-board** - 6 hours

Performance:

The traceability, value assignment, and stability of the Calibration Verification Materials have been validated following procedures of Siemens Healthcare Diagnostics.

Analyte Levels/ Targets:

Value Assignment Targeted Concentration of levels	
IMMULITE® 1000	**IMMULITE® 2000**
CVM 1 = 0.0 ng/mL	CVM 1 = 0.0 ng/mL
CVM 2 = 0.16 ng/mL	CVM 2 = 0.19 ng/mL
CVM 3 = 2.7 ng/mL	CVM 3 = 2.9 ng/mL

CVM 4 = 11.2 ng/mL	CVM 4 = 12.0 ng/mL

Matrix:

Normal horse serum

Constituents:

Unconjugated Estriol spiked in normal horse serum, with100 ppm Proclin 950 as a preservative.

Preparation method:

The IMMULITE uE3 Calibration Verification Material levels contain Estriol spiked in normal horse serum and 100 ppm Proclin 950 as a preservative.

uE3 CVM Value Assignment:

The uE3 reference calibrator values are assigned by using a panel of real serum samples from pregnancy patients which were value assigned by GC-MS. This reference calibrator lot was then used to assign values of uE3 CVM. The reference calibrator and CVM are run on both IMMULITE/IMMULITE® 1000 and IMMULITE® 2000 systems. The average observed value for each CVM is used as their assigned value. Quality control is then performed by monitoring the recovery of controls.

Protocol:

Production lots of calibration verification materials are value assigned against the reference calibrators using multiple reagent lots which are run on at least three different instruments.

Calculations:

Calibration verification material values are derived using four-parameter weighted data algorithm reduction of the reference calibrator for each run on each instrument. Calibration verification material values are then averaged across all instruments.

CVM Release Ranges by Platform:

IMMULITE/IMMULITE® 1000			
CVM (ng uE3/mL)	**Target μ (ng uE3/mL)**	**Range (ng uE3/mL)**	**Precision (% CV)**
0	0	0 – 0.07	NA
0.16	0.16	0.07 - 0.25	<15
2.7	2.7	1.91 - 3.49	<10
11.2	11.2	8.73 – 13.7	<10

IMMULITE® 2000			
CVM (ng uE3/mL)	Target μ (ng uE3/mL)	Range (ng uE3/mL)	Precision (% CV)
0	0	0 – 0.07	NA
0.19	0.19	0.09 - 0.29	<15
2.9	2.9	2.03 - 3.77	<10
12	12.0	8.86 -15.14	<10

Assay Range (Target μ)

0.07-12 ng uE3/mL

Validation of Value Assignment:

Controls and Calibration Verification Material (CVM) levels are run to examine against the specification.

Acceptance Criteria:

Calibration Verification Material (CVM) ranges fall within established ranges for all levels.

Calibration Interval:

Not Applicable for Calibration Verification Material (CVM)

Traceability:

Calibration Verification Material CVM traceability is internal reference calibrators. Reference calibrators are traceable to individual human samples assigned with GC-MS values.

Controls:

Commercially available controls are recommended.

QC Acceptance Limit:

To monitor system performance and chart trends, as a minimum requirement, it is recommended to assay two levels of quality control material on each day that samples are analyzed. It is also recommended to assay quality control samples when performing a two point Adjustment. Use of commercially available control materials with at least three levels is recommended. Control results are considered acceptable if they are within the range published for the system or within the range established by the customer using an appropriate internal laboratory quality control scheme.

The recommended assay adjustment interval was based on the analyte recovery of the controls and samples from kit reagents stored at 2-8°C over time. The control testing frequency is done according to standard practices in clinical laboratory quality control schemes.

Warnings and Precautions:

Please refer to attached IMMULITE Unconjugated Estriol (uE3) Calibration Verification Material Instruction for Use document for Warnings and Precautions.

"For In Vitro Diagnostic Use" Statement:

Please refer to attached IMMULITE Unconjugated Estriol (uE3) Calibration Verification Material Instruction for Use document for the In Vitro Diagnostic Use Statement. For *in vitro* diagnostic use as a control for calibration verification of the IMMULITE Unconjugated Estriol (UE3) assays on the IMMULITE/IMMULITE 1000, 2000 and 2000 XPi systems.

Procedure:

Please refer to IMMULITE Calibration Verification Material "Instruction for Use" document for "Directions for Use" including reconstitution and preparation.

Limitations:

Please refer to IMMULITE Instruction for Use document for Limitations.

References:

Please refer to IMMULITE Unconjugated Estriol Instruction for Use document for References.

Technical Assistance:

Please refer to the IMMULITE Unconjugated Estriol Calibration Verification Material (CVM) Instruction for Use document and CVM labels for contact information concerning the manufacturer.

Conclusion statement:

Per 21 CFR 807.92(b)(3) the nonclinical tests conducted for the uE3 Calibration Verification Materials (CVM) demonstrate that the device is as safe and effective, and performs as well as the predicate device.

DEPARTMENT OF HEALTH & HUMAN SERVICES Public Health Service

Food and Drug Administration
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SEP 2 1 2011

Siemens Healthcare Diagnostics
c/o Ernest Joseph
Senior Manager, Regulatory Affairs
511 Benedict Avenue
Tarrytown, NY, 10591, USA

Re: k110061
Trade/Device Name: IMMULITE Unconjugated Estriol (uE3) Calibration Verification Material
Regulation Number: 21 CFR 862.1660
Regulation Name: Quality Control Material (Assayed and Unassayed)
Regulatory Class: Class I, Reserved
Product Code: JJX
Dated: July 21, 2011
Received: July 22, 2011

Dear Mr. Joseph

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in Title 21, Code of Federal Regulations (CFR), Parts 800 to 895. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Parts 801 and 809); and good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820).

This letter will allow you to begin marketing your device as described in your Section 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Office of *In Vitro* Diagnostic Device Evaluation and Safety at (301) 796-5450. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding postmarket surveillance, please contact CDRH's Office of Surveillance and Biometric's (OSB's) Division of Postmarket Surveillance at (301) 796-5760. For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 796-5680 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm.

Sincerely yours,

Courtney H. Lias, Ph.D.
Director
Division of Chemistry and Toxicology
Office of *In Vitro* Diagnostic Device
Evaluation and Safety
Center for Devices and Radiological Health

Enclosure

Indications for Use Form

510(k) Number (if known) K110061

Device Name: IMMULITE® Unconjugated Estriol (uE3) Calibration Verification Material (CVM)

Indications for Use:

For *in vitro* diagnostic use as a control for calibration verification of the IMMULITE® Unconjugated Estriol (uE3) assays on the IMMULITE/IMMULITE 1000, 2000 systems.

The calibration verification material is assayed control with four levels. The analyte levels for IMMULITE 1000 are 0.00, 0.16, 2.70 and 11.2 ng/ml, and 0.00, 0.19, 2.90 and 12.00 for IMULITE 2000 systems. The matrix is estriol in processed horse serum.

Prescription Use_____X_____ AND/OR Over The Counter Use_____
(21 CFR 801 Subpart D) (21 CFR 801 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of In Vitro Diagnostic Devices (OIVD)

Division Sign-Off
Office of In Vitro Diagnostic devices
Evaluation and Safety